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TROUBLESHOOTING GUIDE

Datalogic Matrix 320 troubleshooting guide: errors, faults and fixes

Updated 21 October 2026 · By TIMCOD maintenance technicians · Source: official Datalogic documentation, Matrix 320 2MP Liquid Lens Quick Reference Guide (821007084 Rev. E) and Matrix 320 2MP C-Mount Quick Reference Guide (821007723 Rev. D) (list at the end of the page)

TIMCOD PRODUCT PAGE (IN FRENCH)

See the Datalogic Matrix 320 product page →

In brief. The Datalogic Matrix 320 is an industrial fixed-mount scanner with a 2-megapixel sensor, available in a liquid lens version (electronic focus, remotely adjustable) or a C-Mount version (interchangeable lens, manual focus). It reports its status through 360° light feedback (blue, green, red by default), seven lights, a beeper and an X-PRESS button, and incorporates a time-of-flight distance sensor and an orientation sensor. The Datalogic documents consulted mainly link no-reads to the reading distance of the optics, to illumination and to filters, and point out that it runs on 24 Vdc. This guide brings together 22 entries: signals, focusing, illumination, triggering, Ethernet, industrial protocols, power supply, covers and safety. Click a question to open its entry.

- **The light ring or a light changes colour:** find the signal in the [lookup table](#) and open the matching entry.

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- **The scanner does not scan:** start with [the scanner does not read](#), then [liquid lens](#) or [C-Mount](#) focusing and the [reading](#) section.
- **The scanner does not power on or does not communicate:** see [24 V power supply](#) and the [connection](#) section.
- **The problem keeps coming back:** the [preventive maintenance](#) section explains how it reduces this type of fault.

What do the 360° light and the lights on my Datalogic Matrix 320 mean? Find your signal

The Matrix 320 shows its status through 360° light feedback, visible from all sides, and through the lights of its X-PRESS interface (Status, Communication, Trigger, Good Read, Ready, Power On, Network). The table links each signal described by Datalogic to its cause and to the corresponding entry.

Signal	Colour (Datalogic documentation)	Likely cause	Entry
Blue 360° feedback	blue (default setting)	Scanner in configuration mode	360° light
Green 360° feedback	● green (default setting)	Successful read	360° light
Red 360° feedback	● red (default setting)	Read failed	NO READ
STATUS light on	● red	NO READ result	NO READ
All lights flash for one second	● ● ● all	Start-up (reset or restart)	24 V power supply

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Signal	Colour (Datalogic documentation)	Likely cause	Entry
Power On light	—	Power status	<u>24 V power supply</u>
READY light on	● green	The scanner is ready to operate	<u>The scanner does not scan</u>
GOOD light on, green spot	● green	Successful read	<u>Test mode</u>
TRIGGER light on	● yellow	Reading phase status	<u>Triggering</u>
COM light on	● yellow	Active communication on the main serial port	<u>Serial connection</u>
Network light (Ethernet Network)	—	Ethernet connection status	<u>Gigabit Ethernet</u>
Light bar graph in Test mode	● ● ● X-PRESS lights	Static reading performance	<u>Test mode</u>

The 360° feedback colours are those given on the Datalogic product page and data sheet (default setting, configurable); the lights come from the Matrix 320 2MP Liquid Lens and C-Mount quick start guides. A dash means that these documents do not specify the colour or behaviour of the light.

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Datalogic Matrix 320 360° light and lights: what do they mean?

The 360° light feedback and the STATUS light indicate the reading status; here is what they mean according to Datalogic.

What do the colours of the 360° light ring on my Datalogic Matrix 320 mean?

360° light feedback: blue, green or red.

Short answer: By default, the Matrix 320's 360° visual feedback lights up blue when the scanner is in configuration mode, green after a successful read and red after a failed read. These colours are configurable: if they do not match, check the scanner's settings.

LIKELY CAUSE

The Datalogic product page presents this multicolour 360° feedback as a simple way to see the scanner's status from all sides; the data sheet specifies that it is configurable and gives the default colours: Good Read in green, No Read in red, configuration in blue.

WHAT TO DO

1. Red: the scanner has not decoded a code, see the [NO READ](#) entry.
2. Blue: the scanner is in configuration mode (default colour).
3. Green: the read was successful; if the host receives nothing, check the connection (see the [connection](#) section).
4. If the colours you see differ from these, they may have been changed: check the visual feedback configuration in DL.CODE.

Datalogic also offers a light tower with an audible signal as an accessory (LED Tower, 93ACC0410).

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Sources: [Matrix 320 Series Stationary Industrial Scanners - Datalogic](#) – Datalogic product page · [User Interface](#) – Matrix 320 2MP Data Sheet (Datalogic, DS-MATRIX320-2MP-EN Rev. I) (official documentation).

Why does my Matrix 320 light up red when a product passes?

Red 360° feedback · Light: STATUS (red).

Short answer: Red indicates a failed read: the STATUS light shows a NO READ result. The code was not decoded; check that it passes within the reading range of the optics and that the illumination is suitable, then run the X-PRESS button's Automatic Setup again.

LIKELY CAUSE

According to the Datalogic quick start guides, the STATUS light (red) indicates a NO READ result; the data sheet gives red as the default colour of the 360° feedback for a no-read. The causes of no-reads described by Datalogic relate to the reading distance, the illumination and the photometric setting.

WHAT TO DO

1. Follow the procedure in the [scanner does not read](#) entry.
2. Check the distance of the code against the range of the optics (see [liquid lens](#) or [C-Mount](#)).
3. If distance limits have been defined, check that they do not exclude the code (see [distance sensor](#)).
4. Assess the result with the Test mode bar graph (see [Test mode](#)).

Sources: [User Interface – HMI X-PRESS](#) – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [User Interface](#) – Matrix 320 2MP Data Sheet (Datalogic, DS-MATRIX320-2MP-EN Rev. I) (official documentation).

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My Datalogic Matrix 320 does not read codes: focusing, illumination and triggering

Reading range of the optics, electronic or manual focusing, distance sensor, illumination, filters and triggering: the parameters described by Datalogic.

Why won't my Datalogic Matrix 320 fixed-mount scanner read barcodes?

Symptoms: red 360° feedback, red STATUS light, no data transmitted.

Short answer: Place the code within the reading range of the installed optics, then use the X-PRESS button: Aim Mode to centre the target on the aiming system, Automatic Setup to optimise the photometric parameters, and Test to check the result. For full configuration, use DL.CODE.

LIKELY CAUSE

The Datalogic quick start guides describe installing the Matrix 320 in three steps: mechanical mounting, electrical connections, then configuration via the X-PRESS interface (Aim Mode, Automatic Setup, Test) for a simple setup, or via DL.CODE for full configuration. Each lens has its reading range; the scanner accepts an angle (pitch) of $\pm 35^\circ$ and any rotation (tilt) from 0 to 360°.

WHAT TO DO

1. Check that the distance of the code matches the installed optics (see [liquid lens](#) or [C-Mount](#)).
2. Check the scanner's angle: no more than $\pm 35^\circ$ relative to the code.
3. Activate Aim Mode with the X-PRESS button and centre the target horizontally and vertically relative to the aiming system.
4. Run Automatic Setup with the code presented to optimise the photometric parameters.
5. Check the result with Test mode (see [Test mode](#)).

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6. On a shiny surface, see the [reflections](#) entry; if the image lacks light, see [illumination](#).

Sources: [Installation Procedure](#); HMI X-PRESS; [Optical Features](#) [↗](#) – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [Installation Procedure](#) [↗](#) – Matrix 320 2MP C-Mount Quick Reference Guide (Datalogic, 821007723 Rev. D) (official documentation).

Why does my liquid lens Matrix 320 read poorly after a change of distance or product?

Symptoms: blurred image after a change of batch or product format.

Short answer: On liquid lens models, focusing is electronic and each lens has its range: 50 to 550 mm for the 6 mm, 35 to 1,000 mm for the 9 mm, 70 to 1,500 mm for the 16 mm. If the distance of the code has changed, adjust the focus, which Datalogic lets you change remotely, without opening or touching the scanner.

LIKELY CAUSE

The Datalogic product page states that liquid lens models (6, 9 and 16 mm) use electronic focusing, which can be changed remotely when the production batch changes; it also makes it possible to take several images of the same object at different focal distances. The quick start guide gives the reading ranges and fields of view: 48° (6 mm), 34° (9 mm) and 20° (16 mm).

WHAT TO DO

1. Identify your model's lens (LL6, LL9 or LL16 in the part number).
2. Check that the new distance of the code remains within the range of this lens.
3. Adjust the electronic focus, then run Automatic Setup again with the code presented.
4. Check reading in Test mode (see [Test mode](#)).

The built-in time-of-flight distance sensor measures the reading distance and adjusts the photometric settings (see [distance sensor](#)).

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Sources: [Matrix 320 Series Stationary Industrial Scanners - Datalogic](#) – Datalogic product page · [Optical Features](#) – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [Optical Features – Focus](#) – Matrix 320 2MP Data Sheet (Datalogic, DS-MATRIX320-2MP-EN Rev. I) (official documentation).

Why won't my Matrix 320 C-Mount read codes that are too close to the lens?

Symptoms: blurred image at short distance, or after changing the lens.

Short answer: On the Matrix 320 C-Mount, focusing is manual and depends on the lens: each focal length has a minimum reading distance, measured from the front of the lens (0 mm for the 4 mm, 50 mm for the 6 and 8 mm, 100 mm for the 12 mm, 200 mm for the 16, 25 and 35 mm). Choose a lens compatible with the actual distance and refocus.

LIKELY CAUSE

The Datalogic C-Mount quick start guide lists the 4, 6, 8, 12, 16, 25 and 35 mm lenses, with field angles from 73° to 9°, and their minimum reading distances. The data sheet specifies that focusing on C-Mount models is manual; the product page states that the scanner accepts C-Mount lenses from Datalogic and other manufacturers.

Caution: Datalogic asks you to switch off the power before opening the device during installation or maintenance.

WHAT TO DO

1. Identify the focal length of the fitted lens and compare its minimum reading distance with the actual distance of the code.
2. If the code is too close, move the scanner further away or choose a shorter focal length.
3. Refocus the lens manually at the reading distance.

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4. Refit the lens cover correctly: it is part of the housing and determines the IP67 sealing.
5. Run Automatic Setup again, then check in Test mode.

Sources: [Optical Features](#); [Environmental Features](#); [Compliance](#) [↗](#) – Matrix 320 2MP C-Mount Quick Reference Guide (Datalogic, 821007723 Rev. D) · [Optical Features – Focus](#) [↗](#) – Matrix 320 2MP Data Sheet (Datalogic, DS-MATRIX320-2MP-EN Rev. I) · [Matrix 320 Series Stationary Industrial Scanners - Datalogic](#) [↗](#) – Datalogic product page (official documentation).

Why does my Matrix 320 ignore some codes presented too close or too far away?

Symptoms: codes read at one distance, ignored at another, with no apparent image fault.

Short answer: The Matrix 320 incorporates a time-of-flight distance sensor that measures the reading distance. In hands-free reading, it lets you set distance limits to avoid unintentional reads: a code presented outside these limits is not read. Check whether such limits have been defined in the configuration.

LIKELY CAUSE

According to the Datalogic product page, all Matrix 320 models have a time-of-flight distance sensor (Time of Flight) that measures the reading distance and adjusts the photometric settings; it is also used to define distance limits to prevent unwanted reads.

WHAT TO DO

1. Measure the distance at which the code is presented.
2. In the scanner configuration, check whether distance limits are active and whether they include this distance.
3. Widen or remove the limits if they exclude codes that need to be read.
4. Check reading in Test mode.

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Source: [Matrix 320 Series Stationary Industrial Scanners - Datalogic](#) – Datalogic product page (official documentation).

Why does the image from my Matrix 320 lack contrast despite the illuminator?

Symptoms: dark or washed-out image, code with little contrast against its background.

Short answer: Check the illuminator, your model's light colour and any filter fitted. For the Matrix 320, Datalogic offers red (635 nm), blue (470 nm) and infrared (850 nm) band-pass filters, as well as UV-cut, infrared-cut and YAG filters, and 14- or 36-LED illuminators.

LIKELY CAUSE

According to the Datalogic data sheet, liquid lens models have a 14-LED (High Power) or 36-LED (Very High Power) illuminator, in blue, red or white; C-Mount models have a 36-LED illuminator in blue, white, infrared or UV, or an external illuminator. The covers and filters guide lists the band-pass, UV-cut, infrared-cut and YAG filters suitable for the 14- and 36-LED versions. The product page mentions a flicker-free high power continuous illumination mode.

Caution: According to Datalogic, the internal illuminators are in risk group 1 (EN 62471), except the UV illuminator on C-Mount models, classified in group 3 (see [safety](#)).

WHAT TO DO

1. Note the number of LEDs (14L or 36L) and the illumination colour (RED, WHT or BLU) from the part number.
2. If a band-pass filter is fitted, compare its wavelength (635, 470 or 850 nm) with your model's illumination colour.
3. Run Automatic Setup again to re-optimize the photometric parameters.

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4. If the contrast remains low, consider another illumination colour or a more powerful illuminator.

Sources: [Illumination; Optical Features](#)  – Matrix 320 2MP Data Sheet (Datalogic, DS-MATRIX320-2MP-EN Rev. I) · [Covers and filters](#)  – Matrix 320 and P2x-Series Accessory Covers and Filters Quick Reference Guide (Datalogic, 821007152 Rev. C) · [Matrix 320 Series Stationary Industrial Scanners - Datalogic](#)  – Datalogic product page (official documentation).

Why won't my Matrix 320 read codes on shiny surfaces?

Symptoms: patch of light on the image, codes on film or polished metal not read.

Short answer: Reflections from the illumination hide the code. For the Matrix 320, Datalogic offers polarising covers (93ACC0273 for the 14-LED version, 93ACC0274 for the 36-LED version) and a half-polariser kit for the 14-LED version (93ACC0275), which requires DL.CODE 1.9.2 or later.

LIKELY CAUSE

The Datalogic covers and filters guide lists the standard, ESD and polarising covers for the Matrix 320 as well as the half-polariser kit, and specifies the minimum DL.CODE version required for the latter. The liquid lens quick start guide also lists the polarising cover among the accessories.

Caution: Switch off the power to the scanner before removing the front cover.

WHAT TO DO

1. Identify your illuminator version (14 or 36 LEDs) from the scanner part number.
2. If the reflection persists, fit the polarising cover suited to your illuminator (14 or 36 LEDs) following the [cover and filters](#) entry.
3. For the half-polariser kit, check that DL.CODE is version 1.9.2 or later.
4. Check reading in Test mode.

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Sources: [Covers and filters; Filter Mounting](#) – Matrix 320 and P2x-Series Accessory Covers and Filters Quick Reference Guide (Datalogic, 821007152 Rev. C) · [Optical Features](#) – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) (official documentation).

How does Test mode on my Matrix 320 let me check reading?

Lights: X-PRESS light bar graph.

Short answer: The X-PRESS button's Test mode shows a bar graph on the lights to check static reading performance. Use it after Aim Mode and Automatic Setup, with the code held still in front of the scanner.

LIKELY CAUSE

The Datalogic quick start guides list Test mode among the three functions of the X-PRESS button, along with Aim Mode and Automatic Setup, for simple configuration without a PC.

WHAT TO DO

1. Present the code, held still, within the reading range.
2. Activate Test mode with the X-PRESS button and watch the bar graph.
3. If the bar graph stays low, redo Aim Mode and Automatic Setup (see [the scanner does not read](#)).

Sources: [HMI X-PRESS](#) – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [HMI X-PRESS](#) – Matrix 320 2MP C-Mount Quick Reference Guide (Datalogic, 821007723 Rev. D) (official documentation).

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Why doesn't my Matrix 320 start reading on the photocell signal?

Light: TRIGGER (yellow), which indicates the status of the reading phase.

Short answer: Check the operating mode (Continuous, One Shot, Phase Mode or PackTrack) and the photocell wiring on input 1 (External Trigger), pins 6 and 5 (I1A/I1B) of the 17-pin M12 connector. The yellow TRIGGER light indicates the status of the reading phase.

LIKELY CAUSE

According to the Datalogic quick start guide, the Matrix 320 has two optocoupled, polarity-insensitive inputs: input 1 (external trigger, pins 6 and 5) and input 2 (pins 13 and 3), limited to 30 Vdc and 10 mA. The available operating modes are Continuous, One Shot, Phase Mode and PackTrack.

WHAT TO DO

1. In DL.CODE, check that the operating mode expects a trigger (One Shot or Phase Mode).
2. Check the photocell wiring on pins 6 (I1A) and 5 (I1B) of the 17-pin M12 connector, or on the connection box.
3. Check that the input voltage and current stay within the limits: 30 Vdc and 10 mA maximum.
4. Pass a product through and watch the TRIGGER light.

Sources: [M12 17-pole Power, COM, and I/O Connector; Technical Specifications \(Electrical, Software, User Interface\)](#)  – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [Technical Specifications – Electrical](#)  – Matrix 320 2MP C-Mount Quick Reference Guide (Datalogic, 821007723 Rev. D) (official documentation).

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My Matrix 320 needs to send codes to a PC like a keyboard: what is the solution?

The Matrix 320 has no USB port; Datalogic offers converter cables for USB keyboard emulation.

How can my Matrix 320 send scanned codes to PC software like a keyboard?

Symptoms: the PC receives nothing as keyboard input, as the scanner only has Ethernet and serial ports.

Short answer: The Matrix 320 has no native USB output. Datalogic offers two converter cables for USB keyboard emulation: an Ethernet to USB HID keyboard converter (93A050146) and an RS232 serial to HID keyboard converter (93ACC0268).

LIKELY CAUSE

The Datalogic product page lists these two converter cables among the Matrix 320 accessories. The scanner's native interfaces are 10/100/1000 Mbit/s Ethernet, the RS232 or RS422 main serial port and an RS232 auxiliary port.

WHAT TO DO

1. Choose the converter according to the port used: Ethernet (93A050146) or RS232 serial (93ACC0268).
2. Check in the DL.CODE configuration that the scanner sends its data on this port.
3. Open an input field on the PC and scan a test code.

Sources: [Matrix 320 Series Stationary Industrial Scanners - Datalogic](#)  – Datalogic product page · [Technical Specifications – Electrical](#)  – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) (official documentation).

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My Matrix 320 does not communicate: Gigabit Ethernet, industrial protocols, serial and outputs

X-coded M12 Ethernet connector, industrial protocols, serial ports and digital outputs: the characteristics to check according to Datalogic.

Why doesn't my Matrix 320 appear on the Ethernet network?

Symptoms: scanner cannot be found, network light off.

Short answer: The Matrix 320 connects via an X-coded female M12 Ethernet connector, at 10, 100 or 1,000 Mbit/s. Check the X-coded M12 cable and any RJ45 adapter, then search for the scanner with DL.CODE or the Web Device Discovery function.

LIKELY CAUSE

According to the Datalogic quick start guide, the X-coded M12 Ethernet connector has eight pins forming four bidirectional pairs and supports Gigabit. The data sheet mentions discovery of scanners on the network (Web Device Discovery) and a web monitoring interface with diagnostics and image logging via FTP; the product page lists Gigabit M12 and RJ45 cables and adapters.

Caution: According to the Datalogic guide, the Ethernet port and the data port must only be connected to networks routed solely within the site.

WHAT TO DO

1. Check that the cable is an X-coded M12 cable, with the connector tightened.
2. Check the status of the scanner's network light.
3. Search for the scanner with DL.CODE or the Web Device Discovery function.
4. Once the scanner has been found, use the web monitoring interface for diagnostics if needed.

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Sources: [M12 X-Coded Ethernet Connector; Compliance](#) – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [Interfaces; Software and diagnostics](#) – Matrix 320 2MP Data Sheet (Datalogic, DS-MATRIX320-2MP-EN Rev. I) · [Matrix 320 Series Stationary Industrial Scanners - Datalogic](#) – Datalogic product page (official documentation).

Which industrial protocols does my Matrix 320 use to communicate with the PLC?

Symptoms: the PLC does not receive the read data.

Short answer: The Matrix 320 communicates via TCP/IP, UDP, FTP and, on the PLC side, via PROFINET IO, EtherNet/IP and Modbus TCP, without an external module. The data sheet adds SFTP, OPC UA and the Datalogic ID-NET network. Check that the protocol enabled in the scanner is the one expected by the PLC.

LIKELY CAUSE

The Datalogic quick start guides list the Ethernet protocols TCP/IP, UDP, FTP, EtherNet/IP, Modbus TCP and PROFINET-IO; the data sheet also mentions SFTP, OPC UA, ID-NET and the Pass Through, master/slave and point-to-point Ethernet connection modes.

WHAT TO DO

1. Identify the protocol expected by the PLC (PROFINET IO, EtherNet/IP, Modbus TCP or OPC UA).
2. In DL.CODE, check that this protocol is enabled and configured in the scanner.
3. On a network of several scanners, check the chosen connection mode (Pass Through or ID-NET master/slave).
4. Check the Ethernet connection (see [Gigabit Ethernet](#)).

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Sources: [Technical Specifications – Electrical](#)  – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [Interfaces and protocols](#)  – Matrix 320 2MP Data Sheet (Datalogic, DS-MATRIX320-2MP-EN Rev. I) (official documentation).

Why doesn't my Matrix 320 send anything on its serial connection?

Light: COM (yellow), which indicates active communication on the main serial port.

Short answer: The Matrix 320's main serial port is set by software to RS232 or RS422 Full Duplex, from 2,400 to 115,200 bit/s; it uses pins 10 to 12 and 17 of the 17-pin M12 connector. Check the interface type and the baud rate, and do not leave the RX lines floating.

LIKELY CAUSE

According to the Datalogic quick start guide, the scanner has an RS232/RS422 Full Duplex main port and an RS232 auxiliary port (pins 14 for RX and 4 for TX), both from 2,400 to 115,200 bit/s. The guide specifies that the RX lines must not be left unconnected. The yellow COM light indicates active communication on the main port.

WHAT TO DO

1. In DL.CODE, check that the main port is set to the correct type (RS232 or RS422 Full Duplex) and to the baud rate expected by the host.
2. Check the wiring on pins 10 to 12 and 17 of the 17-pin M12 connector.
3. Connect the RX lines; do not leave them floating.
4. Send a read and check that the COM light comes on.

Source: [M12 17-pole Power, COM, and I/O Connector; User Interface – HMI X-PRESS; Technical Specifications](#)  – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) (official documentation).

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Why don't the outputs on my Matrix 320 drive the ejector or the PLC?

Symptoms: no output signal after a read or a no-read.

Short answer: The Matrix 320 has three outputs that can be configured as NPN, PNP or push-pull, short-circuit protected and limited to 100 mA each. Check the output type chosen, the wiring (pins 9, 8 and 16) and the load. When connected via a CBX box, outputs 1 and 2 become optocoupled and their electrical characteristics change.

LIKELY CAUSE

The Datalogic quick start guides and data sheet describe three NPN, PNP or push-pull digital outputs, with an output voltage of 24 Vdc maximum and a load current of 100 mA maximum. With the CBX connection box, the first two outputs are optocoupled.

WHAT TO DO

1. In DL.CODE, check the type of each output (NPN, PNP or push-pull) and the event that controls it.
2. Check the wiring of outputs 1, 2 and 3 on pins 9, 8 and 16 of the 17-pin M12 connector, or on the CBX.
3. Check that the load does not exceed 100 mA.
4. With a CBX, take into account the specific characteristics of the optocoupled outputs 1 and 2.

Sources: [Technical Specifications – Electrical](#)  – Matrix 320 2MP C-Mount Quick Reference Guide (Datalogic, 821007723 Rev. D) · [M12 17-pole Power, COM, and I/O Connector](#)  – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [Digital outputs](#)  – Matrix 320 2MP Data Sheet (Datalogic, DS-MATRIX320-2MP-EN Rev. I) (official documentation).

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My Matrix 320 does not power on: 24 Vdc power supply and grounding

The Matrix 320 requires a 24 Vdc $\pm 10\%$ power supply, a narrower range than that of other Matrix scanners.

Why won't my Matrix 320 start up when powered on?

Lights: no one-second general flash at start-up, Power On light off.

Short answer: At start-up, all the lights on the Matrix 320 flash for one second. Without this signal, check the power supply: the scanner requires 24 Vdc $\pm 10\%$, on pins 1 (Vdc+) and 2 (GND) of the 17-pin M12 connector, supplied by an ES1 or PS2 type external power supply in accordance with IEC 62368-1.

LIKELY CAUSE

The Datalogic quick start guides set the power supply at 24 Vdc $\pm 10\%$. The C-Mount guide gives a peak current of 250 mA without an illuminator and 850 mA with the white illuminator (average current 150 and 520 mA): the power supply must handle these current surges.

Caution: Switch off the power before opening the device during installation or maintenance, according to Datalogic, to avoid any exposure to the laser.

WHAT TO DO

1. Measure the voltage on pins 1 and 2: it must be between 21.6 and 26.4 Vdc (24 Vdc $\pm 10\%$).
2. Check that the power supply delivers the peak current for your version, especially with an illuminator.
3. Connect the scanner chassis to the installation's earth with a flat copper braid shorter than 100 mm; for a direct connection, connect the cable shield to the connector's locking ring.

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4. Power on again and watch for all the lights flashing for one second.

When to call a technician: the scanner does not start up despite a compliant power supply: Datalogic points out that installation, use and maintenance do not require opening the scanner, and its guide refers you to technical support on the Datalogic website.

Sources: [M12 17-pole Power, COM, and I/O Connector; User Interface; Technical Specifications – Electrical; Compliance; Support Through the Website](#) [↗](#) – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [Technical Specifications – Electrical; Compliance](#) [↗](#) – Matrix 320 2MP C-Mount Quick Reference Guide (Datalogic, 821007723 Rev. D) (official documentation).

How do I configure a Matrix 320? X-PRESS button, DL.CODE and orientation sensor

Quick setup with the X-PRESS button, full configuration with DL.CODE and storing the mounting orientation.

What is the X-PRESS button on my Matrix 320 for?

Lights: X-PRESS lights (Ready, Good, Trigger, COM, Status) and beeper.

Short answer: The single X-PRESS button gives access without a PC to three functions: Test (bar graph of reading performance), Aim Mode (turns on the aimer to orient the scanner) and Automatic Setup (automatic optimisation of the photometric parameters). For full configuration, use DL.CODE.

LIKELY CAUSE

The Datalogic quick start guides present X-PRESS as the Matrix 320's simple configuration interface, with DL.CODE used for full configuration. The button is configurable via DL.CODE; the data sheet describes the X-PRESS interface as a beeper, a button and seven lights.

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WHAT TO DO

1. Use Aim Mode to centre the target relative to the aiming system.
2. Run Automatic Setup with the code presented.
3. Check the result with Test mode (see [Test mode](#)).
4. If the button does not offer these functions, check its configuration in DL.CODE.

The C-Mount quick start guide only lists Test and Automatic Setup among the button's functions, but mentions Aim Mode in the installation procedure.

Sources: [HMI X-PRESS; Installation Procedure; User Interface](#)  – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [HMI X-PRESS; Installation Procedure](#)  – Matrix 320 2MP C-Mount Quick Reference Guide (Datalogic, 821007723 Rev. D) · [User Interface](#)  – Matrix 320 2MP Data Sheet (Datalogic, DS-MATRIX320-2MP-EN Rev. I) (official documentation).

How do you configure a Matrix 320 beyond the X-PRESS button settings?

Symptoms: need to set the reading logic, formatting or protocols.

Short answer: Full configuration of the Matrix 320 is done with DL.CODE, Datalogic's Windows software, via Ethernet or a serial connection. The scanner also accepts programming sequences in host mode over a serial connection. The parameters are kept in permanent flash memory.

LIKELY CAUSE

The Datalogic quick start guides list three configuration methods: the X-PRESS interface, DL.CODE (Windows, via Ethernet or serial) and host mode programming sequences. The data sheet adds a JavaScript output formatter in DL.CODE and a web monitoring interface. The guide says to search for the product name on the Datalogic website to obtain manuals, software and drawings.

WHAT TO DO

1. Download DL.CODE from the Datalogic website (search by product name).

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2. Connect the PC to the scanner via Ethernet or a serial connection.
3. Set up the full configuration in DL.CODE, including the formatting of the data sent to the host.
4. Then check reading in Test mode.

Sources: [Software Features; Support Through the Website; Installation Procedure](#)  – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [Software and diagnostics](#)  – Matrix 320 2MP Data Sheet (Datalogic, DS-MATRIX320-2MP-EN Rev. I) (official documentation).

Why does my Matrix 320 report a change of orientation?

Symptoms: orientation alert after a knock, removal or replacement of the scanner.

Short answer: The Matrix 320 incorporates an orientation sensor that stores its mounting position and warns the operator if it changes. Put the scanner back in its original position; in the event of a replacement, Datalogic states that the saved orientation can be restored on the new device.

LIKELY CAUSE

According to the Datalogic product page, the orientation sensor helps with positioning during installation and saves this position in permanent memory. It warns the operator if the orientation changes, to avoid production stoppages.

WHAT TO DO

1. Check whether the scanner or its bracket has moved (knock, work on the line).
2. Put the scanner back in its saved position.
3. If the scanner is replaced, restore the saved orientation on the new device.
4. Check reading in Test mode.

Source: [Matrix 320 Series Stationary Industrial Scanners - Datalogic](#)  – Datalogic product page (official documentation).

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Matrix 320 covers, filters, temperature and safety

Replacing the front cover and filters, operating conditions and laser and LED safety instructions.

How do I replace the front cover or the filter on my Matrix 320?

Symptoms: scratched cover, need for an ESD or polarising cover, or a filter.

Short answer: With the scanner powered off, undo the four screws with a 2.5 mm Allen key, remove the cover, clean the new one if necessary with a soft cloth and alcohol, then refit it the right way round by pressing on the frame and not on the window. Tighten the screws to 0.8 N·m.

LIKELY CAUSE

The Datalogic guide to Matrix 320 covers and filters describes the replacement procedure and lists the standard, ESD and polarising covers (14- and 36-LED versions) and the YAG, band-pass, UV-cut and infrared-cut filters.

Caution: Switch off the power to the scanner before removing the cover. Check that the filter's Poron frame, which may remain stuck to the removed window, has been refitted.

DATALOGIC PROCEDURE

1. Disconnect the scanner's power supply and work in a dust-free area.
2. Undo the four screws with a 2.5 mm Allen key.
3. Remove the cover; if it remains stuck by the seal, gently lever it at the corners with a flat-blade screwdriver, between the cover and the housing.
4. For a filter: lift the original screen or filter by its sides, place the new filter on its two guide pins, lying flat.
5. Check that the cover is clean; if necessary, clean it with a soft cloth and alcohol, without abrasive products.

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6. Orient the cover: identification grooves on the right on the 14-LED version, special pin in its housing on the 36-LED version.
7. Fit the cover by pressing on the edges of the frame, never on the window; remove the old seal if it has stayed on the housing, as the new cover has its own.
8. Engage the four screws, then tighten them to 0.8 N·m.

Source: [Cover Replacement Procedure; Filter Mounting](#) – Matrix 320 and P2x-Series Accessory Covers and Filters Quick Reference Guide (Datalogic, 821007152 Rev. C) (official documentation).

Why does my liquid lens Matrix 320 need a heat sink in hot environments?

Symptoms: installation near a heat source, very hot housing.

Short answer: Liquid lens models operate from 0 to 45 °C, compared with –10 to 50 °C for C-Mount models. In hot environments, Datalogic asks you to use metal brackets and the heat sink supplied.

LIKELY CAUSE

The Datalogic quick start guides give these operating ranges (0 to 50 °C for C-Mount part number 938100071) and recommend metal mounting brackets and a heat sink for applications with a high ambient temperature. IP65 and IP67 sealing is only ensured with IP67 sealed cables and a correctly fitted lens cover.

WHAT TO DO

1. Check the actual ambient temperature at the mounting point and the range for your version.
2. Mount the scanner on a metal bracket with the heat sink supplied.
3. Check that the cables are IP67 sealed and that the lens cover is correctly fitted.

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Sources: [Environmental Features](#)  – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [Environmental Features; Illumination and Accessories](#)  – Matrix 320 2MP C-Mount Quick Reference Guide (Datalogic, 821007723 Rev. D) (official documentation).

Are the aiming laser and the illumination on my Matrix 320 dangerous to the eyes?

Symptoms: cross-shaped laser aimer and LED illuminator visible to operators.

Short answer: The Matrix 320 is a Class 2 laser product (IEC 60825-1); the LED illumination is classified in risk group 1 (EN 62471). The UV illuminator on C-Mount models is in risk group 3: Datalogic restricts it to competent persons equipped with protection, including safety glasses.

LIKELY CAUSE

The Datalogic quick start guides give these classifications and specify that using controls, adjustments or procedures other than those specified may result in exposure to hazardous laser light. With the DOE LTM x2x-xxx illuminator, the C-Mount is a Class 1 laser product. The laser can be turned on or off by a software command.

Caution: Switch off the power before opening the scanner: installation, use and maintenance do not require opening it, according to Datalogic.

WHAT TO DO

1. Do not stare at the aiming beam and only use the settings provided by Datalogic.
2. For a C-Mount model with a UV illuminator, restrict access to competent persons equipped with safety glasses.
3. Before opening the device for installation or maintenance, switch off the power.

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Sources: [Compliance – LED Safety; Laser Safety](#)  – Matrix 320 2MP Liquid Lens Quick Reference Guide (Datalogic, 821007084 Rev. E) · [Compliance – LED Safety; Laser Safety](#)  – Matrix 320 2MP C-Mount Quick Reference Guide (Datalogic, 821007723 Rev. D) (official documentation).

When should you call a technician for a Datalogic Matrix 320 scanner?

The entries above first suggest a setting, cleaning or a reset. In the following cases, the documentation refers you to support or a technician:

- **Scanner that does not start up with a compliant power supply:** The scanner is not opened for maintenance; the Datalogic guide refers you to the services and technical support on the Datalogic website (see [24 V power supply](#)).

Avoiding recurring faults on the Datalogic Matrix 320 scanner: preventive maintenance

Worn battery, degraded reading, lost settings: several entries in this guide cover points that a preventive maintenance visit checks before they cause a breakdown.

TIMCOD preventive maintenance is part of the [through-life maintenance \(MCO\)](#). TIMCOD provides for your fleet (page in French). In particular, it includes:

Preventive battery replacement

Recommended every 18 to 24 months, for removable batteries.

General check of the devices

Each device checked and cleaned, minor faults fixed and a report provided.

Inventory of the fleet under contract

Training and skills transfer

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Type, configuration and IP address of each device.

Transfer of technical skills on using the equipment.

Detailed report

Inventory, condition of the fleet and optimisation advice.

In addition, TIMCOD corrective maintenance includes phone support (hotline), repair to working order, express exchange with a replacement device and, as an option, SWAP. Maintenance contracts come in three levels (Essentiel, Confort, Premium).

Datalogic Matrix 320 scanner troubleshooting: frequently asked questions

What do the colours of the 360° light on the Matrix 320 mean?

By default, the 360° visual feedback lights up blue in configuration mode, green after a successful read and red after a failed read. These colours are configurable. [See the detailed entry.](#)

How do I adjust the focus on a liquid lens Matrix 320?

Focusing is electronic and can be changed remotely, without opening or touching the scanner. Each lens has its range: 50 to 550 mm for the 6 mm, 35 to 1,000 mm for the 9 mm, 70 to 1,500 mm for the 16 mm. [See the detailed entry.](#)

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What power supply does a Matrix 320 need?

The Matrix 320 requires 24 Vdc $\pm 10\%$, supplied by an ES1 or PS2 type external power supply in accordance with IEC 62368-1. At start-up, all its lights flash for one second. [See the detailed entry.](#)

Which industrial protocols does the Matrix 320 support?

The Matrix 320 communicates via PROFINET IO, EtherNet/IP and Modbus TCP, as well as TCP/IP, UDP and FTP. The data sheet adds SFTP, OPC UA and the Datalogic ID-NET network. [See the detailed entry.](#)

Can a Matrix 320 be connected to a PC like a keyboard wedge handheld scanner?

Not directly: the Matrix 320 has no USB port. Datalogic offers two converter cables for USB keyboard emulation, one from Ethernet (93A050146), the other from the RS232 serial port (93ACC0268). [See the detailed entry.](#)

What is the X-PRESS button on the Matrix 320 for?

It gives access without a PC to three functions: Test, Aim Mode and Automatic Setup, which automatically optimises the photometric parameters. Full configuration is done with the DL.CODE software. [See the detailed entry.](#)

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How do I change the front cover on a Matrix 320?

With the scanner powered off, undo the four screws with a 2.5 mm Allen key, remove the cover, then fit the new one the right way round by pressing on the frame and not on the window. Tighten the screws to 0.8 N·m. [See the detailed entry.](#)

Sources consulted

All the causes, procedures and signals in this guide come from the pages of the official Datalogic documentation listed below, consulted on 20 October 2026.

- [Matrix 320 2MP Liquid Lens Quick Reference Guide \(ENG\)](#) [↗](#) – Matrix 320 Quick Reference Guide (Datalogic, 821007084 Rev. E, March 2026) **official**
- [Matrix 320 2MP C-Mount Quick Reference Guide \(ENG\)](#) [↗](#) – Matrix 320 C-Mount Quick Reference Guide (Datalogic, 821007723 Rev. D, March 2026) **official**
- [Matrix 320 2MP Data Sheet](#) [↗](#) – Datalogic data sheet (DS-MATRIX320-2MP-EN Rev. I) **official**
- [Matrix 320 and P2x-Series Accessory Covers and Filters Quick Reference Guide \(ENG\)](#) [↗](#) – Covers and filters guide (Datalogic, 821007152 Rev. C, September 2021) **official**
- [Matrix 320 Series Stationary Industrial Scanners - Datalogic](#) [↗](#) – Datalogic product page **official**

The Matrix 320 2MP Product Reference Guide (ENG, 31.75 MB) and the Matrix 320 5MP Product Reference Guide on cdn.datalogic.com, the DL.CODE User's Manual 1.9 and 1.12, the DL.CODE 2.0.2 release notes and the Datalogic download centre were not consulted for this guide and are not cited. If the fault falls under these documents, refer to the manufacturer's documentation or ask the TIMCOD technicians.

See also

- Product page on [timcod.fr](https://www.timcod.fr) (in French): [Datalogic Matrix 320](#)
- All troubleshooting guides for Datalogic scanners and mobile computers (PowerScan 9100, PowerScan 9500, PowerScan 9600, Matrix 120, Matrix 220, Falcon X4, Falcon X60 / X65, Memor X3, Skorpion X3, Skorpion X4, Skorpion X40/X45, Skorpion X5)

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- [Maintenance and repair of Datalogic scanners](#)
- [All barcode scanner and mobile computer troubleshooting guides, all brands](#)
- [TIMCOD repair and maintenance](#)
- [Through-life maintenance \(MCO\): preventive and corrective maintenance \(in French\)](#)
- [Industrial scanners and mobile computers \(in French\)](#)

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PDF version of the page <https://www.timcod.fr/reparation/en/barcode-scanner-troubleshooting/datalogic/matrix-320>, updated on 21 October 2026.

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